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CANADIAN BUREAU

OF

INFORMATION

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A

Canadian Bureau of Information

This little volume contains information concerning a movement to establish a Bureau of Information in each of the principal industrial and commercial centres of Canada, with branches in the other industrial cities, towns and villages, each bureau and branch bureau to be equipped with a commercial library, museum and reading room, for the purpose of supplying information and literature on any subject and encouraging a greater general interest in and knowledge of Canada's resources, industries and commerce, as well as the preparation and education necessary to a career of the highest usefulness in their development.

Inauguration of Movement

On the invitation of The Industrial and Educational Press, Ltd., a number of gentlemen interested in the dissemination of industrial and commercial information assembled at Dinner at the University Club on the evening of March the 5th, 1917.

This little volume gives a list of those present, a report of the discussion and the resolution adopted.

There is also included a memorandum giving suggestions concerning the organization and arrangement of a commercial museum.

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Resolution Adopted by Those Present at the Meeting Which Was Held at the University Club of Montreal on March 5th, 1917.

Moved by Mr. George Carruthers, of Toronto, Ont.
Seconded by Mr. D. J. Byrne, of Montreal, Que.

WHEREAS there is need in Canada for some movement calculated to give greater effectiveness to the facilities already provided, and to be provided, by the various government and municipal authorities for the collection and dissemination of industrial and commercial information, and for the promotion of technical education.

AND WHEREAS in the opinion of those present such a movement might arise from a co-ordinate effort on the part of existing technical, trade and professional organizations.

BE IT THEREFOR RESOLVED, that we here present, together with such others as may wish to join us, form ourselves into an organization to be known as the

"CANADIAN BUREAU OF INFORMATION."

The objects of this organization to be as follows:

First: To provide a central Bureau of Information which may eventually be equipped with a library, files and a staff capable of supplying information and advice concerning industrial and commercial matters, particularly those that have to do with domestic production and the domestic and foreign trade of Canada.

Second: To encourage, and where possible, provide material for the strengthening of the public libraries, and the libraries of secondary schools, with literature calculated to give their readers an up-to-date and reliable account of the industries, commerce, finances and resources of Canada, as well as a knowledge of the opportunities these spheres offer, and the preparation necessary to take full advantage of them.

Third: To encourage and assist in the establishment of museums for the exhibition of Canadian products and those of other countries that might be produced in Canada, as well as the products of other countries which are neces-

sary to the industry and commerce of Canada.

Fourth: To provide, in so far as possible and encourage the production of photographs, plates and other reproductions of scenes pertaining to Canadian industries and resources for use in schools and for public lectures.

Fifth: To assist in the establishment of trade and technical schools, as well as to encourage the people to take fuller advantage of such facilities for education and training.

BE IT FURTHER RESOLVED that the above mentioned "Canadian Bureau of Information" be under the control of a Board of Directors, composed of ten Directors elected annually by the members of the organization, together with the following ex-officio directors, or such of them as may wish to act:

The President of the Union of Canadian Municipalities.

The President of the Canadian Manufacturers' Association.

The President of the Canadian Bankers Association.

The President of the Dominion Educational Association.

The President of the Canadian Mining Institute.

The President of the Canadian Fisheries' Association.

The President of the Canadian Pulp and Paper Association.

The President of the Canadian Textile Institute.

The President of the Retail Merchants' Association of Canada.

The Chairman of the Society of Chemical Industry.

The President of the Canadian Society of Civil Engineers.

A Representative from each of the four principal railway systems.

Together with the President or other Chief Officer of any other Association, Society, or Institute, that the Board of Directors may decide to add from time to time.

A List of the Gentlemen Who Were Present at the Meeting Which Was Held at the University Club of Montreal on March 5th, 1917.

Adams, Frank, D., Ph.D., D.Sc., F.R.S.
Ex-President Canadian Mining Institute.

Bacon, Norman H.
Hudson Bay Company.

Bates, John S., Ph.D.
President Technical Section Canadian Pulp & Paper Association.

Bates, Chas. W.
Vice-President Canadian Textile Institute.

Bates, Stanley E.
Editor Canadian Textile Journal and Secretary Canadian Textile Institute.

Beaudry, J. A.
Editor Le Prix Courant and Treasurer of Retail Merchants' Association of Canada.

Boyd, Leslie H., K.C.
President Union of Canadian Municipalities.

Brittain, A. H.
Vice-President Canadian Fisheries Association.

Brown, Warren G.
Secretary Montreal Publicity Association.

Byrne, D. J.
Past President Canadian Fisheries Association.

Campbell, Roy.
Formerly Secretary Canadian Pulp & Paper Association.

Charlton, H. R.
Publicity Agent Grand Trunk Railway.

Chevrier, Horace.
President Retail Merchants' Association of Canada.

Christie, A. S.
Advertising Manager of Industrial & Educational Press, Limited.

Cole, Arthur A.
President Canadian Mining Institute.

Carruthers, George.
President Interlake Tissue Mills, Ltd.

Dale, Prof. J. A., M.A.
Departments of Education & Commerce, McGill University.

Daoust, J. A. C.
President La Chambre de Commerce.

Delage, The Hon. Cyrille F.
Vice-President Dominion Educational Association.

Dowe, A. L.
Secretary Canadian Pulp & Paper Association.

Fielding, The Hon. W. S. (Chairman).
President and Editor-in-Chief of Journal of Commerce.

Fitzsimons, W. P.
Industrial Commissioner, Grand Trunk Railway.

Harpell, J. J.
President Industrial & Educational Press, Limited.

Hore, Reg. E., M.A.
Editor Canadian Mining Journal, and Member of Council Canadian Mining Institute.

Howe, Harrison E.
Canadian Representative of Arthur D. Little Company.

Lamb, H. Mortimer.
Secretary Canadian Mining Institute.

Lorrain, Leon.
Secretary La Chambre de Commerce.

Macallum, A. B., Ph.D., F.R.S.
Chairman Advisory Council of Industrial & Scientific Research, Department of Trade & Commerce.

Mathews, W. S.

McLeod, Prof. C. H.
Secretary Canadian Society of Civil Engineers

Paulhus, J. A.
Member of the Executive Canadian Fisheries Association.

Perrault, A. J.

Peterson, Sir William, K.C.M.G., LL.D.
Principal of McGill University.

Putman, J. H., LL.D.
Secretary Dominion Educational Association.

Riordon Carl.
Past President Canadian Pulp & Paper Assotion.

Robertson, Jas. W., C.M.G., LL.D.
Past President Dominion Educational Association.

Ross, Henry T.
Secretary Canadian Bankers' Association.

Ross, R. A., C.E.
Member of Honorary Advisory Council of Industrial & Scientific Research, Department of Trade & Commerce.

Ross, H. S., K.C.

Ross, J. C., M.A.
Associate Editor, Journal of Commerce.

Ruttan, Prof. R. F., M.D.
Canadian Member of Council, Society of Chemical Industry, also member of the Honorary Advisory Council of Industrial & Scientific Research, Department of Trade and Commerce.

Scott, W. P.

Sexton, Fred. H.
Director Technical Education, Province of Nova Scotia.

Smith, C. Howard.
President, Canadian Pulp & Paper Association.

Spooner, W. R.
Member of Executive, Canadian Fisheries Association.

Stewart, F. W.
President Montreal Publicity Association.

Stephenson, J. N., M.S.
Editor Pulp & Paper Magazine of Canada.

Timmerman, H. P.
Industrial Commissioner, Canadian Pacific Railway.

Thompson, W. H.
Industrial & Technical Press.

Tombs, Guy.
Canadian Northern Railway.

Van Bruyssel, F.

Wallace, F. W.
Editor Canadian Fisherman and Secretary Canadian Fisheries Association.

Webster, T. P.,
Dominion Textile Company.

Williams, Geo. E.
Chairman Executive Committee, Life Underwriters' Association of Canada.

Wilson, S. Y.
President Canadian Fisheries Association.

Wright, Frederick.
Editor Canadian Municipal Journal.

REPORT OF SPEECHES.

THE HONOURABLE W. S. FIELDING, PRESIDING.

BY THE CHAIRMAN: Gentlemen, Mr. Harpell, representing the Company whose guest we are tonight, has kindly asked me to take the chair. I have consented to do so, upon the condition, however, that the chairman's duties are to be nominal, and that he is to say as little as possible. I want to observe that condition, and if I should at all depart from it, I hope you will call me to account.

Mr. Harpell, whose genius for organization in matters of educational, industrial and economic development is well known, has acquired the valuable habit of travelling with his eyes open. Not everybody possesses that habit. Many there are who travel widely and see but little, because they see only that which ministers to their pleasure for the moment. When our friend Mr. Harpell travels, he is always on the lookout for the things that make for advancement, and whenever something of that kind attracts his attention, he is moved to enquire whether we have something like it at home, and if not, why not.

In some recent wanderings he made a visit to the staid old Quaker City of Philadelphia. Philadelphia was once described as a quiet place to which busy New Yorkers might go when they wanted rest. But if Philadelphia is less aggressively noisy than the bigger city, it nevertheless contains many things which will reward careful examination and study. Mr. Harpell was particularly attracted to one of the city's institutions, the Philadelphia Commercial Museum, and he was so much impressed with its usefulness that since his return to Canada he has been talking with others similarly interested of the advisability of establishing here an organization of the same character. It is for the consideration of that question, and of questions generally bearing on industrial development, that Mr. Harpell's company has invited its guests on the present occasion. I will now ask Mr. Harpell to address you.

MR. J. J. HARPELL: Mr. Chairman and Gentlemen: While the visit to the Philadelphia Commercial Museum was the immediate occasion of the movement which has culminated in the meeting to-night, the subject before us this evening is one that has been awaiting solution for a long time. Many of you have been grappling with it for years, and I am not sure that a completely satisfactory solution is to be found in Philadelphia. But after looking over the work which the Philadelphia Commercial Museum is doing, I think it is one of the finest examples I have seen on this Continent of work calculated to arouse the people to a consciousness of the needs of industry and commerce.

Furthermore, I was impressed with the similarity its methods bore to those by which many parts of Great Britain and other European countries had accomplished so much, namely, by an appeal to the visual and inquisitive instincts of the individual.

We had hoped to have with us this evening Dr. W. P. Wilson, Director of the Philadelphia Commercial Museum, but at the last moment he was compelled to write and say that:

> "It is with very great regret that I find our duties here are so pressing it will be impossible for any of the Commercial Museum's staff to be present at your meeting. I have most pleasant recollections of a visit to your city under somewhat similar circumstances, when I had the very great pleasure of meeting a number of your prominent business men, and of enjoying the warm hospitality to strangers for which Montreal is noted. You may be sure that you have my cordial sympathy in your efforts to establish an organization, which I understand is designed to carry on a work similar, in many respects, to that being done by the Philadelphia Commercial Museum.
>
> "The task of establishing and placing on a working basis an organization of that nature is greater than may appear at first glance. The mere training of a competent force is not easy, nor can it be done in a few weeks or months,—but it is only one of the essentials.
>
> "The accumulation of the necessary data, the establishment of foreign connections—channels through which new data must be constantly coming in—the securing of continued support, financial as well as moral, are each important, in fact, indispensable, if success is to be attained.

"The establishment of a reputation for accuracy, independence and reliability, the mere overcoming of the natural inertia, which is so difficult to accomplish in any new movement, are not the least important factors in an enterprise such as you are about to inaugurate.

"With energy combined with patient painstaking effort, added to the public spirited and patriotic interest on the part of those prominent in commercial and industrial circles, these difficulties can be readily overcome. It is with the full belief that you will find these qualities among those upon whom you will call for co-operation and support that I have confidence in the successful outcome of your efforts.

"Will you express to those who are so fortunate as to be able to attend your meeting, my sincere regret that circumstances make it impossible for the Commercial Museum to be represented, and further assure them of my willingness to co-operate with them in any way that may be desirable and practical."

Another gentleman who has evinced a keen interest in the objects of this meeting, and had hoped to be present, but at the last moment was forced by the pressure of the important duties of his office to wire his regrets and wish us success, is the Right Honorable Sir George E. Foster, Minister of Trade and Commerce.

We have also a letter from Mr. E. L. Pease, President of the Canadian Bankers' Association, who explained that absence from the city will prevent him from being with us, but that Mr. Henry T. Ross, the Secretary, will be pleased to attend and represent the Canadian Bankers' Association.

We have also a letter from Mr. J. G. Elliott, President of the Canadian Press Association, who, while he finds it impossible to be with us, expresses the hope

"That the purpose for which you are gathered will be successfully accomplished, and as a co-ordinated body, you may do much to assist the business interests of the country."

The response to the call for this meeting is most gratifying. We have here to-night over sixty gentlemen, representatives of most, if not all, the na-

tional Associations, Societies and Institutes, representing the business and educational interests of the country.

The purpose of the meeting is not easy to define in a few words, and can best be comprehended by a survey of the work to be done.

According to the latest returns, there are about one hundred thousand people who earn their bread and butter in the fishing industry of the country, yet the monetary value of the total output of fish is less than $35,000,000.00 a year, or less than $350.00 per person. We might reasonably expect the per capita production would be twice or three times this, and why is it not? It cannot be due to the lack of resources, because Canada possesses fishing grounds unsurpassed either in quantity or quality of fish by those of any other country. It is due to the indifferent manner in which the fishermen go about their work. And gentlemen, this indifference this lack of progressiveness is due to the fact that of these 100,000 people, less than 3,000 are readers of literature calculated to keep them abreast of the times and give them an idea, first, of the methods that might improve their catch, and second, of how the products of their labors should be prepared and packed that they may bring the highest price in the markets of the world. Of these 100,000 people less than 1,000 are members of the Canadian Fisheries Association, a Society embodying the most progressive elements of the industry.

In the mining industry of this country there are over seventy thousand workers, and of these, less than three thousand are readers of specialized mining literature, and less than one thousand are members of the Canadian Mining Institute.

The Textile industry is in much the same condition, as are also many, if not all of the important industries of the country.

We all know how rapidly the methods in all these industries are changing, and unless the workers of this country keep pace, they cannot hope to meet the competition they will have to face after the war.

This indifference towards progressive methods, or prejudice for old inherited habits, —whichever you may call it—is not due to lack of latent power, either mental or physical, as may be seen by the magnificent manner in which the Canadian people have ad-

justed themselves to meet the enemies of civilization. In less than three years they have accomplished in the arts of war more than the people of Central Europe accomplished in thirty. This shows what they are capable of when aroused and organized

How, then, gentlemen, can we arouse and organize the producing forces of this country to meet the competition in the arts of peace when the war is over? That is the question uppermost in the minds of most people, and if this meeting can throw any light on this matter, it will not have been in vain.

There is little use of establishing trade or technical schools until the people themselves have asked for and are prepared to take advantage of them; and libraries, no matter how well filled, have little attraction for the adult or the youth who is not a habitual reader.

There is only one other method left, namely, the appeal which an up-to-date Commercial Museum and a live Bureau of Information makes to the visual and inquisitive instincts of the average individual. This is no untried experiment, but a method whose value has been repeatedly demonstrated in many of the older countries, and the one that is working so well in Pennsylvania under the name of the Philadelphia Commercial Museum.

Some Facts About the Philadelphia Museum.

The Philadelphia Commercial Museum is a public institution developed and controlled by a Board of Trustees and responsible to the Mayor of Philadelphia. It is supported by appropriations from the city of Philadelphia and the State of Pennsylvania, by the fees from manufacturing, commercial and banking interests of the country who make use of its services and by the revenue from the periodicals which are published under its direction. Its board of trustees is composed of prominent and influential men who give their services without compensation and with no possibility of private gain. Some members of the board are ex-officio members and others are appointed. The ex-officio members are the Governor of Pennsylvania, the Mayor of Philadelphia, the President of Select Council, the President of Common Council, the President of the Board of Public Education, the Superintendent of Schools.

the State Superintendent of Public Instruction and the State Forestry Commissioner.

Among those who have served on this board and who have given to it much of their time and loyal support, there may be mentioned especially such influential citizens as:

George B. Roberts, for many years President of the Pennsylvania Railway.

Charles H. Cramp, head of the Cramp Shipbuilding Company.

John Wanamaker.

Dr. William Pepper, formerly of the University of Pennsylvania.

One of the best evidences of the efficiency of this organization lies in the fact that several foreign countries have made a very careful examination of its activities and have established Commercial Museums on a somewhat similar plan. In a number of cases, notably those of Japan and Brazil, these have been made Government institutions.

The work of the Philadelphia Commercial Museum is conducted under three Departments:

First: An active and up-to-date Commercial Museum for the entertainment and instruction of the manufacturer, the prospective purchaser, the student and the general public.

Second: An extensive work in education for the benefit of the schools of the City of Philadelphia and the State of Pennsylvania. This work includes the following:

(a) The distribution, free of cost, to public schools in all parts of Pennsylvania, of large collections of specimens to aid teachers in geographic and commercial instruction. These collections are not loaned, but remain permanently in the schools to which they are sent. They include the principal articles which make up the bulk of the world's commerce and represent the chief industries of mankind. The specimens are arranged to show the important raw materials and the stages through which they pass in the process of manufacture. (A complete set of these specimens has been purchased by the Industrial & Educational Press, Limited, and are on exhibition here to-night. As you may notice, they are very complete,

and would form a valuable adjunct to the library and night classes in any of our towns and villages.

(b) The loan, free of cost, to public school teachers in all parts of Pennsylvania, of sets of colored slides accompanied by lantern, screen and typewritten lectures, covering a wide field of geography, commerce and industry. These sets of slides have now a very wide circulation, especially among the rural schools, and every year reach tens of thousands of pupils in all sections of the State.

(c) A special series of lectures in the Museum to classes from the schools and colleges of Philadelphia and vicinity.

Third: A Foreign Trade Bureau in which thousands of manufacturers in the United States are aided and furnished with information on all matters pertaining to foreign trade. The work of this department has resulted in a compact, practical and efficient organization, employing trained experts, and the accumulation of a large amount of classified data relating to the trade and commerce of the world.

The information furnished by the Foreign Trade Bureau covers such points as:

(a) Tariffs, shipping and packing.

(b) Requirements and opportunities of foreign markets.

(c) Trade mark and patent laws.

(d) Consular regulations, shipping routes and similar information relating to the invoicing and transportation of goods for foreign countries.

(e) Methods of payment and granting of credits.

(f) Competition to be met in foreign markets.

(g) Names of reliable business houses throughout the world.

(h) It prints a monthly journal, "Com-

mercial America," issued in both English and Spanish, for circulation abroad in the interest of manufacturers in the United States, and a "Weekly Export Bulletin," filled with information of value to exporting manufacturers.

i. It is equipped to translate correspondence, catalogues or circulars into or from any modern language.

The Philadelphia Commercial Museum conducts a free reference Library of Commerce, containing foreign and domestic directories, both city and trade, official bulletins of every country publishing them, consular reports from all countries which issue them, the leading magazines, trade journals and dailies, of which over one half are from foreign countries.

An important part of the Philadelphia Commercial Museum is the department which collects, prepares and puts up in suitable form the museum specimens and photographs, which it distributes throughout the State of Pennsylvania. This department is composed of a carpenter shop, where the cabinets are made; a laboratory where the specimens are prepared, and a photograph gallery. It has been the practice of the Philadelphia Commercial Museum to employ during the holidays the students from the higher grades of the schools of Philadelphia, to put up these specimens. This gives these boys and girls a fine experience in manual training.

Canada is poor in facilities such as museums calculated to create a desire for information, but poorer yet in facilities for satisfying such a desire. How few people know where to look for the information they would like to have, and which, if they could get, might form the beginning of a progressive habit. Habits start from small beginnings. It is often the unsuspecting piece of information that reaches the vulnerable spot, creates first the shadow of a new idea and then an inspiration. The young miner, fisherman or other tradesman who has a leisure hour to spend in the neighbouring town, would be inclined to visit the Museum, and, looking over the collections, might see something concerning which he would like to have further information. If the person in charge of this Branch Bureau of Information could not give

it, he might take the name and address of the inquirer, and within a few days thereafter the mails would bring the required information from the head office of the Bureau. This young man might never have taken the trouble to write for this information, even though he knew where to apply. But so few people, even those of us who have had more experience in such searches, know where to look for information. The Industrial and Educational Press receive many requests for information from the readers of its several publications, and we find some of them difficult to fill. A few weeks ago we had an enquiry from a merchant in the northern part of New Brunswick for information concerning the distillation of and market for birch oil. After many unsuccessful attempts, we finally got what was required in a little brochure published a few years ago by the Department of Agriculture of the United States.

There would be no need for a Canadian Bureau of Information to collect and store such literature as this brochure. It is sufficient to know where it can be had. The library of the Philadelphia Commercial Museum is not as extensive as you might expect. It contains mostly reference works, such as the catalogues of the volumes that may be had from various sources, Gazetteers of different countries, Directories of cities, catalogues of different manufacturers, etc. In their Reading Room are kept on file all the various specialized periodicals that are published in the different countries of the world. Information is International, and most Governments are glad to supply on request, copies of anything they have published.

It seems to me that some such Institution should be started in Canada. Central Bureaus, in close co-operation with each other, might be located in the larger centres, such as Montreal, Toronto, Winnipeg, Vancouver, St. John and Halifax, with branch offices in the lesser cities, towns and even villages. In many of these places, there already exist facilities for information on certain subjects, but they are unknown to the majority of the people. For instance, here in Montreal, we have the headquarters of the Canadian Mining Institute, with the secretary and library on the top floor of the Ritz-Carlton Hotel; the secretary of the Canadian Pulp & Paper Association, with offices in the Shaughnessy Building on McGill Street; the

secretary of the Manufacturers' Association, with offices in the Board of Trade Building; the secretaries of the Canadian Textile Institute and the Canadian Fisheries Association, with offices in the Read Building; the secretary of the Canadian Society of Civil Engineers, with offices on Mansfield Street; the secretary of the Union of Canadian Municipalities, with offices in the Coristine Building; the offices of the Retail Merchants' Association, is located at 80 St. Denis Street, etc. Each of these offices are excellent sources of information concerning their respective fields of business.

What a fine adjunct all these would form to a Central Bureau of Information here in Montreal equipped with a good commercial museum, reference library and reading room all under the one roof. Each of these secretaries might have their own suite of offices, and their own specialized libraries. But the museum, general library, reading room, committee room and auditorium could be used by all.

A number of these organizations maintain secretaries in several other large centres. But in most cities and towns, none of them are sufficiently strong to maintain a local organization by themselves. But they might co-operate and maintain a joint secretary, who would have under his supervision a bureau of information, a museum, a library, a reading room, and facilities for night classes. In almost every industrial city, town and village throughout Canada there are already members of one or more of our national organizations, such as the Manufacturers' Association, Canadian Mining Institute, Canadian Fisheries Association, Pulp and Paper Association, etc. Those men are invariably the most progressive citizens of the place. In most places there is already the beginning of a library. Most of the Provinces also encourage the establishment of, and liberally support, night classes, museums and libraries. For instance, the Province of Ontario offers to pay two-thirds of the salaries up to $3,000.00 a year for technical night classes, and half the salaries for commercial night classes in a town the size of Cornwall. That Province also pays over half the cost of libraries, and 40% of the equipment the first year, and 20% of the same equipment during each of the next three succeeding years, or 100% in all. Furthermore, it is specified in the regulations that said equipment shall include a

museum containing samples of commercial products, with a brief description of each, and a set of photographs.

So you see, gentlemen, there already exists considerable of the machinery required, as well as provision for a considerable part of the running expenses. All that is required is to set it in operation, and encourage the people to take advantage of it.

For many reasons such a movement might very well proceed from the national associations which are so well represented here to-night.

The civic government of a place can be so easily and directly reached through the Union of Canadian Municipalities. The retail merchants could be appealed to through the local members of the Retail Merchants' Association of Canada. The bankers would be interested if the Canadian Bankers' Association was associated with the movement. The school teachers might be appealed to through the Dominion Education Association.

In communities where mining was an important industry the influence of the Canadian Mining Institute and its local members would be an important factor. In fishing communities the Canadian Fisheries Association would be the influential factor. In manufacturing communities the Manufacturers' Association, together with such specialized industrial and technical organization as the Canadian Textile Institute would be a powerful influence.

BY THE CHAIRMAN: I am sure that Mr. Harpell placed this matter before us in a very comprehensive manner. We shall be happy to hear from Professor J. A. Dale, of the Department of Education and Commerce, of McGill University, on the subject opened by Mr. Harpell.

PROFESSOR DALE: Mr. Chairman and Gentlemen: I am very glad to add something to reinforce the statements of Mr. Harpell, as to the necessity of some basis for co-operation, by which we can make a more effective use of the available information in connection with industry and commerce and the preparation of those who go into them.

The desire for accurate and well-directed information is at the back of Mr. Harpell's proposal. He sees, as he has travelled about with his eyes wide open,

that there is very close connection between real effectiveness in operation, and real concentrated information.

We have a considerable number of very active and very effective organizations in their own lines; but we need some active, alert, thinking centre whose business it shall be to collect information, especially bearing upon our industries, put it into suitable form, and bring it to the notice of those who could make use of it.

I must confine myself to one aspect of this subject, and point out its very great educational importance.

We know that every year an immense number of young people go into the industries and occupations of Canada. When we realize the amount and kind of preparation with which they are making a beginning of their life's work we get something of a shock. We have assumed that our schools and colleges are preparing young people for life. In some ways this confidence is not unjustified; but when we look at the special occupations that our boys and girls are going into, we find a singular lack of fitness between their preparation and their work. Again, when we look at those who are already at work, and ask what means they have of further education to make the most of their abilities, then we are bound to admit that the facilities afforded by our country are in most places very small indeed.

I was speaking to a meeting yesterday afternoon, and after the meeting a young fellow came to me and asked me where he could get the information or instruction which he desired, to make himself more effective in his own particular business. He said: "I can not take off two or three years in the engineering department at McGill; and I could get a job now there is one open to me if I can get a certain amount of training I am making inquiries as to what can be done; but our educational system does not provide for his particular case, which is only one of many.

Educational systems are learning more and more both to use the material of industry for educational purposes, and at the same time to give better preparation to those who are going out into the industries. Each industry has some special needs; but all need a basis of practical intelligence which it is the business of education to train. Along both these lines

we need all the knowledge we can get of what is being done elsewhere. It may be said that this is available. So it is — for those who know where it is and how to get it. What is needed is an active collecting, selecting and distributing agency. The knowledge is brought home to us from time to time. For example when Dr. Robertson's report was [illegible] people realized for the first time the great value of information [illegible] [illegible] W[illegible]

and in what work; it can also require that the hours laid down for the continuation school shall be taken out of their working hours, and paid for as work. This will, no doubt, have to be in some form (or rather in various forms suited to various conditions) the solution of the very serious difficulty of finding time and means for the continuation of training beyond the school limits.

You all know the problem of the night school, and what a poor solution it is, to ask people who have been at work all day to study in the evening as well. There are thousands upon thousands who do — all honor to them — I have had them in my own classes; but it can not possibly be a permanent part of a well conceived system. It represents a stage in educational progress — but only a stage to be passed. It is simply an example of the truth that our educational provision is conditioned by the economic and social system out of which it arises, although it is destined to change it. This calls to mind the fact that it is only about a hundred years ago since there was a statute on the statute books of England which required that all children who were working — seventy-two hours a week — should go to school on Sunday to make up, on that one day, for the schooling they had not been able to get on the six days. That is outrageous; and the time is coming when it will seem outrageous to make no provision for the continuation of education past the rudiments of school, other than by night work.

The City of Edinburgh has a complete system of continuation schools. It is in four divisions,. all carefully mapped out, with the proper arrangement of subjects: I. For pupils from 14 to 16. II. More advanced and specialized classes for pupils over 16. III. Courses covering three or more years for pupils over 17 who are qualified. These classes cover all the occupations — engineering, navigation, printing, textiles, agriculture, etc., etc., which are strongly represented in the city and its neighborhood. IV. This division consists of 'auxiliary classes' not provided for under the law, and provides physical training, voice production and certain arts.

Thus in that city, half the size of the city of Montreal, there is within the reach of every child, an education covering a field almost as wide as that from which the life's work will be chosen; giving him the advan-

tage of training in the most valuable and dangerous years, even if the accident of wealth does not open to him the High School and the University. Such a system, even if imperfect in plan or execution, can not fail to yield a handsome return in a higher level of education, in better citizens, living richer lives, and better fitted for the occupations they are going to follow.

While I am thinking of Scotland I will mention one more example, because of a personal incident. I was speaking to one of my classes about the textile school at Galashiels, which is typically Scotch in that it strives to make those who go through that school more intelligent, as well as technically more efficient. One of my students told me that his uncles went through this school. One of them, who had never suspected any ability for designing, developed with opportunity and training till he is now an expert designer, holding an important and satisfactory position in this industry. Not only he but the community benefits by his skill, which would never have been developed, unless some educational institution had been serving both the needs of the industry and the capacities of youth.

One might take such an example as the city of Munich, with its system of continuation schools. It is a city about the size of the city of Montreal. There are 70,000 children in its schools, and there are seventeen thousand in its compulsory continuation schools, which are based upon and lead into the occupations followed in the city, while not neglecting the cultivation of a general education. If a trade can number twenty apprentices, it can automatically claim a trade school. Before the war there were over fifty such schools, planned to be more than mere technical schools, while technically very efficient. Many trades are always in a position where they have to take boys who are leaving school with a smattering of education; a very serious gap ensues before they become competent. Under a continuation school system, when they enter the trade they are well equipped technically, and on a much higher level of general intelligence. The interval of inefficiency is greatly shortened, which makes at the very lowest a paying investment. More than that, it does something to help solve the far-reaching problem of true economy of the labor, the time, the health and the life of our youth.

There is one side of the industrial preparation to which I want to call your special attention. It may become a very useful part of an institution such as Mr. Harpell has suggested. That is the guidance and direction of those leaving school. The need of this is widely felt. In 1912 the National Association of Manufacturers meeting in New York passed a series of resolutions giving expression to their feelings in the matter. The last resolution was in favor of some sort of a bureau or agency by which the children leaving school could be provided with some knowledge of the different kinds of occupations into which they might go, and their various requirements. I might tell you very briefly something of the system followed in the city in which I was brought up, a city distinguished both for its industries and for its education for some generations past — the city of Birmingham. There every boy or girl leaving school is definitely informed as to the possibilities of their after life, and carefully guided in their choice. Some thirteen thousand children every year leave the elementary schools of Birmingham, and a very good proportion go into secondary schools. Since the Choice of Employment Act of 1911, there are Juvenile Employment Bureaus under the control of the Board of Trade, in co-operation with the schools and the voluntary associations called the "Care Committees." These Committees endeavor to know all the children in the schools, and as they number 1,500 members this is quite possible. With the help of the teachers and superintendents of the schools, they get to know the homes and desires and capacities and restrictions of the different children who are going to leave school. Because of the activities of its citizens in the business of government, Birmingham has been called a modern Athens, with what truth does not concern us; but it is worth recalling that the Athenians thought it a necessary part of citizenship that every grown man should interest himself actively in the education of the young; not only in general, but of individual boys. That is being brought back a little in the city of Birmingham, when grown men and women (in business and otherwise) take this particular interest in the children who are passing out of the schools. The employers of the city have got into the habit of applying to the Juvenile Employment Bureau for the service. In the first seventeen months of the operation of that Act no fewer than 11,000 applica-

tions were made by employers to the Juvenile Employment Bureau.

When the system was first put into operation the Chamber of Commerce (which corresponds to the Board of Trade or the Chambre de Commerce here) assisted in making a careful study of all the industries of the city. Very careful inquiries were made in every case as to the number of people employed by the various employers; the average age at which these employees went in; what they needed to make them a success, etc., etc., and all this material was placed at the disposal of the Board of Trade. Thus the different agencies were combined in the joint work of the elevation of youth, and the improvement of the industries, and the benefit of the community. The future of all the children leaving the elementary schools of that city was raised to a higher plane of security and respectability by a fine and instructive piece of co-operation.

I have chosen very few examples out of very many, without any suggestion that we should copy them as they stand, or that we have not good things of our own; but merely as examples of the kind of information known already to the expert, which ought to give fresh inspiration and material and courage to public opinion.

I wish before I close to draw your attention to that most comprehensive scheme of educational reform recently issued by the "Workers Educational Association." This is a federation of over two thousand organizations, mostly trade unions, and includes every University and University College in the country. There is no University or University College in England which has not attached to it a committee representing the labor interests and the academic interests, whose special business it is to look over the industrial field, and see what the needs of the people are, and to see how they can be met. Now, just a word (before I turn to the scheme) about the wide influence of that movement. The outstanding feature of the movement is this: the creation of active public opinion in matters of education. Its members and students during nearly fifteen years are now influential in the world of labor; they have become members of the various local bodies, municipal and educational, and of parliament. They can claim a representative in the new

Minister of Education, Dr. Fisher, the first who was ever appointed to that office for the knowledge of the subject which he represents, in addition to more general personal qualifications. I do not think there is any exaggeration in saying that the W. E. A. is the greatest organized and articulate expression of public opinion on education, and one of its greatest formative agencies.

In the last few months — as late as last December — that Association put forward a scheme of education which comprises features taken from the practice of a great many places, but not found in combination anywhere. It has been discussed and endorsed by meetings of all kinds, held all over England — after its recommendations had been gathered and thrashed out by all the local units of the Association. I take only one point as it directly affects our subject to-night. One of the most drastic features is that the school age should be extended from fourteen years, as it is now, to sixteen. (Applause). But this extension of school is to be accompanied by better use of the time, guided by the principle of a good general foundation, covering a wide field of activities in which the children can later specialize according to their capacities. To provide for this specialization in its final form when the choice of employment has been made (or for those already at work) they have adopted a system of compulsory part-time education up to the age of eighteen. The scheme provides between the ages of sixteen and eighteen, twenty hours attendance at a well-conceived school each week, and limits the working hours to twenty-five. Time spent in school is to be paid for as work. I quote this scheme partly because of the great weight behind it, partly because of its broad wisdom and practical statesmanship. Its spirit is well expressed in the declaration that as the industries and trades and professions exist for the service of the country, the education for them should be regarded as a form of public service.

When we are watching the great number of boys and girls who are going into the various occupations, we are watching the greatest resources of the State, the returns from which will be more vital than anything else. We see them largely wasted, largely undeveloped, for lack of real knowledge of all the facts and issues; though, as with any other development of

natural resources, more than knowledge is necessary for success.

Dr. Fisher has asked for ten million pounds sterling a year. Now, ten million pounds sterling is less than two days of war. It certainly is not too much to expect that if we can carry the huge burden of war with all its destruction, we could carry this little extra burden of education for the rebuilding of the nation's life. (Applause.)

We are losing tremendously—we do not know yet how heavily—upon the battle fields of Europe. But there are fields at home that we can and must cultivate in order to make up for our losses. The men and women who are growing up—these are our only resource, and we must know the best that can be done in its cultivation. To make this possible we need to create an active public opinion through widespread information and discussion. There are some things in which we must wait for Government action. But there are others in which we can act for ourselves, working towards the time when all our children will know what it is to have the best guidance that home and the State can give. (Applause.)

THE CHAIRMAN: I hope the informality of the proceedings and the absence of the toasts will not create any bad impression. I will have to ask the gentlemen to imagine that there is a toast to each speaker, and refresh yourselves accordingly.

We have listened, I am sure, with a great deal of pleasure of Professor Dale's remarks and I now take pleasure in asking Mr. Arthur A. Cole, the President of the Mining Institute to favour us with his views. (Applause.)

MR. COLE: Mr. Chairman and Gentlemen: I came here tonight to listen and I am very glad [illegible] and to have been given this opportunity of listening to the previous speakers. I think that we owe a vote of thanks to Mr. Harper for giving us this [illegible] duty to discuss the question of the co-operation between our industries.

As a member of the mining fraternity I was very deeply interested and there were some points that were brought home very strongly [illegible].

I do not [illegible] as many otters as the mining industry, but we lack a common ground on which we can discuss these [illegible]

tions, and if Mr. Harpell can help us, and give us a common ground for co-operation he is certainly doing us a great deal of benefit, and every industry of the country will benefited thereby. Mr. Harpell is one of our leading members, and I am glad that it was a member of the Canadian Mining Institute who made such a proposal, and you can certainly count on the assistance of the mining fraternity in working out and helping such an institution as is suggested.

This afternoon I had the honour of addressing some of the gentlemen who are here to-night at a little luncheon at the Canadian Club, and speaking that to a member who was at the luncheon, he said, "Yes, I went to the luncheon, was it not windy"? (laughter). I do not know whether he referred to the weather, or to the address, but for fear you might think it was the latter, I will close with these remarks. (Applause.)

The Chairman: Mr. Howard Smith, President of The Canadian Pulp and Paper Association will now favour us with a few observations.

MR. HOWARD SMITH: Mr. Chairman and Gentlemen: I did not expect to have to speak to you to-night, but I have listened with a very great interest to what Mr. Harpell and Professor Dale have said, and I may say, in our own case, that we have found the lack of education—of even a very slight education—has had its effect upon the carrying out of our work. We have mills in the Province of Quebec and in the Province of Ontario, and in the Province of Quebec the school question is a very delicate subject, but I can speak of it in the particular town in which we are located. In that town there are two schools—separate schools—and neither of them do very much toward education. I saw the School Commissioner some time ago, and I suggested to him to try to get a teacher—a competent teacher—in this town. I said "I do not care whether he was French or English or Protestant or Catholic, as long as he can teach." I told him that our company would pay the cost. But nothing has been done yet, and we still have the same kind of school there.

It is in our own interest that we give these children a better education than they are getting. We have been looking for a man, and if we find him, we will give him a permanent job. We will fit up a library for him, and pay the expense, and we will be glad to do it, if he will take these children when they leave.

what I think they call the third grade [illegible] he will take them and carry them on a little bit further. That would naturally teach them something, and of course we would prefer that he should teach them something about the paper making business. We will pay for the library and for the museum necessary. That [illegible]

[illegible] and paper [illegible] We [illegible] industry the immense benefit [illegible] cated workmen. I do not mean college [illegible]

[illegible]

[illegible] and educated workmen [illegible]

[illegible]

times. As far as the [illegible] effect, we all want to [illegible] Mr. H[illegible]

THE CHAIRMAN: We have heard Mr. H[illegible]

[illegible]

Wilson, of Halifax, the P[illegible] Fisheries Association [illegible]

MR. S. Y. WILSON: Mr. [illegible] as the President of the very successful Canadian Fisheries Association [illegible] necessity of technical [illegible] since the Canadian Fisheries Association [illegible]

Mr. [illegible] by [illegible] that until a very short time ago. Lack of technical [illegible]

education has been the one great drawback in the development of the fishing industries of Canada. Practically all the development has taken place in recent years, and such development has been along the lines of fresh, smoked and frozen fish. The development of the cured fish industry has been less within the last fifteen years, and the reason is lack of education. Some of us, who have studied the thing a little, have for some years back tried to bring into existence a better system of education in regard to the fisheries, and I am glad to say there has been some advances made, and Mr. Harpell, who is responsible for bringing about this meeting, has also helped us in bringing about the Canadian Fisheries Association, of which he is a director.

We have tried in many ways to get the Fisheries Department to lead the way in regard to technology in fish culture, and also the Biological Board, but they have done very little. They always claim, as a Department, that the trouble is they do not have enough in their appropriation. Recently we had Mr. J. B. Fielding give us statistics of the benefits of education in connection with the utilization of fish waste. He showed that we were wasting something like 250 thousand tons of fish offal in Canada on the Atlantic and Pacific Seaboard, and also including inland fisheries, which had a commercial value of $22.00 per ton in the raw, or after being graded into culinary oil, had a value of $120.00 per ton. It takes four to six tons of various wastes which we now absolutely destroy to make a finished ton of by-product. That is a thing in which technical education can help us to improve.

We also lack technical education among the fishermen themselves. They won't admit it, but if anybody comes to address them with the "F.R.S." initials after their name, they turn them down at once, because they think a man who has attained any education, cannot possibly do anything in the fishing industry. However, I think things are beginning to change.

In the United States, to take another example, they have there an oyster industry worth about $20,000,000 per annum. We have an oyster industry that yields—well, the yield is so small it is hardly worth mentioning, and the reason for that is absolutely for want of technical education, and want of knowledge, whichever you care to call it, among the people who have been actually producing oysters in the waters the Atlantic seaboard. Inasmuch as on the Atlant eaboard

in our waters we have, I believe, every bit as fine oyster beds as they have in the United States, we may say that $20,000,000.00 annually is being wasted in that particular direction. The same thing probably applies to the herring industry of Canada. Up until the present time it has been going backward. For the last twenty years in Great Britain, more particularly in Scotland, they produce about three million barrels under ordinary conditions, with an average value in Britain to the producer of about $6.50 per barrel. That is the fisheries value—the export value was about $9.00 per barrel. That is taking an average of around $7.50 per barrel, and the average may run from $6 to $16, according to the curing of the fish. The want of technical education, and the want of knowledge in the curing of herring has practically destroyed that industry in Canada. The quantity we now market is a mere bagatelle, and the real reason is that they are not properly cured. If they were, the value would be increased from 100 to 200 per cent., because the consumer would get what he really wants, and what he is paying for. That is a very minor matter to an audience of this kind, but I assure you it is due entirely to want of technical education to take care of the curing and the marketing of the fish, and I assure you, gentlemen, that if the fish were properly cured and properly handled the gentlemen here would very much appreciate salt herring on their tables.

The rule of thumb that was spoken of by Mr. Smith applies also to us in a certain degree, due again to the want of technical education.

Personally, I have visited most of the centres of production of finnan haddie, and I have seen on very rare occasions the salinometer used in testing the brine. They, like the pulp and paper people, use a bucket. It doesn't make any difference to them whether it is an eight-quart bucket or a twelve-quart bucket, it is used just the same, and the result is that what they are getting is not what it should be. We, in our Association, have what we term an Educational Committee, and we tried to get the Department to assist us financially for this purpose; to try to bring about a system of education for the betterment of the industry. We think that that is only right and fair, not only to ourselves, but to the community—that we should ask for an appropriation for this reason. The fish are a natural resource to the country, and it costs the pro-

ducer nothing to produce except the effort of gathering them in. It is unique in that respect. A farmer has to rear and fatten his cattle, but the fisherman does not have to. He gets ready, goes out after certain fish at certain seasons of the year, and gathers them in. It is a natural resource, and we think the Government should assist us in the development, or the teaching or dissemination of knowledge that will assist in the development, of this natural resource.

As Mr. Harpell says, we have one hundred thousand people depending upon the fisheries, for which we only get $35,000,000.00 per annum. Now, starvation has not overtaken these people, because quite a number do not devote their entire time and energy to fishing. Some, about 40,000, devote their attention to lobster fishing, which in some districts only lasts from six to ten weeks. This is about all the time that most of the forty thousand devote to fishing, and if they get three hundred and fifty dollars each per annum they are doing very well out of the industry. The rest of the time is devoted to farming and other occupations. This again is due to want of technical education, so our Association is willing to back this movement to the limit.

I think if we had more on the Museum line, we would create more widespread interest, while it would not perhaps be helping the technical education part of it, it would certainly create a larger interest in the industry, and if the giving of education along the line of technical education will do it, I think that within a short time the value of this greatest of our natural resources could certainly be doubled! (Applause).

BY THE CHAIRMAN: I am sure that I need not remind you that the name of Dr. J. W. Robertson has been very prominently associated with the movement for technical education in Canada, and as we have him present with us to-night, I know that you will be very glad to hear from him. I will now call on Dr. Robertson to address us.

DR. JAS. W. ROBERTSON: Mr. Chairman and Gentlemen: I wish to thank our host who arranged this gathering for the honour and privilege of being here to share in the realization of the objects which were mentioned in the invitation. I am glad to be here to hear from those who are leaders in the various large industries of Canada, to learn what they are doing, what more they would like to do, and to have

done, and what they would like to do and to have done in a better way.

We Lack Organization.

We in Canada have many good things in many places. We have individuals in Canada who are not inferior in capacity or training to others. But we are woefully deficient in the organization of means whereby they may increase their knowledge and become more efficient for the better carrying on of Canada's work. Some remedy for that is urgently needed. Our greatest weakness in Canada is the lack of organized means whereby the best of our knowledge, the best of our brains, and the best of our accomplishments may be put at the service of the people generally. We lack efficient organization whereby knowledge of the best that is being done in one place can be put at the service of other places where similar undertakings, of private or public character, are being carried on, or should be carried on. We have made some good beginnings. We see evidence of progress. The work of the Dairymen's Associations and the work of the Canadian Seed Growers' Association are instances. There are others

We Need Surveys.

I think we need more specific surveys of conditions as they exist in Canada. We need surveys planned to lead to action. And we need to develop and preserve a sense of proportion between the surveys and the action which should be based on the conditions they reveal. We may accumulate so much data, without using it wisely and profitably, that we may have departments surfeited with data instead of being nurtured into constructive action.

To illustrate what I mean may I cite very briefly some of the work which is being carried on by the Committee on Lands of the Commission of Conservation? During four years, surveys were made of over 2,000 farms in different parts of Canada. The object was to learn at first hand and from the farmers themselves the conditions of agriculture, the main difficulties with which they had to deal, and the chief means by which those who were most successful had

become so. The surveys were conducted [illegible] some 60 groups of about 30 farms each, in differe[illegible] localities all over Canada. As a result of the survey a few farms in each group emerged as being better managed, as being in better condition, and as leaving larger profits than the others. The Committee on Lands then proceeded to recognize one of the best farms of each group as an Illustration Farm for the neighborhood. A competent official advisor was sent to visit the farmer several times during the year. The object was to improve, or to bring into existence, on the Illustration Farm the best plans, the best methods and the best kind of management that had been found successful in either that or some other locality. The neighbours watched the changes and progress on these farms, and an impulse was given to better farming in the whole of each neighborhood. These Illustration Farmers, at the end of three years, reported that their businesses had been bettered from 10 to 30 per cent. in the three years during which co-operation lasted between them and the travelling expert. I have no doubt that they are keeping on in the better way, and that they will continue to improve their farms and increase their profits.

The Committee on Lands then undertook to carry the project of illustration and organization one step farther. The County of Dundas, in the Province of Ontario, was taken as an Illustration County. The intention is to follow practically the same lines, in dealing with the County as a whole, as were followed in co-operating with the several Illustration Farmers. The Committee did not pay them, or attempt to do their work for them, or to interfere with their management. It gave them its co-operation to bring about on their farms the plans, methods and kind of management which had been found most successful elsewhere. The Committee on Lands expects to maintain a similar relationship with the Illustration County.

Last year a survey was made of 400 farms in the County; and inquiry was conducted as to the existence of any co-operative methods for buying and selling; a survey of the roads was completed; an inquiry was instituted as to the preparation which the schools of the County are giving the young people for following rural occupations; and an examination was made of the opportunities which exist in the county

for the development of a larger, rich social life. The object is to have all the County, Provincial and Dominion organizations and departments, which deal with these matters, co-operate to bring about in the County the very best conditions for the rural life, in respect to all these matters. I think we have good reason to hope that within a period of five years the Illustration County of the Commission of Conservation will be a valuable illustration of the application of the policy of making surveys to obtain information and of following them up by action to bring about improvements and progress in the best way in proper relation to each other.

As To a Commercial Museum.

As to the question of a Commercial Museum which has been discussed this evening, when I knew I was [illegible] I looked into the archives of my house office [illegible] I remembered that I had prepared an outline of the organization and arrangement of such an institution. It was first prepared in the hope that the Commission of Conservation [illegible] and maintain such a museum in connection with plans [illegible] conservation [illegible] resources.

It is my opinion, in regard to this [illegible] not merely for the [illegible] information, but for the scientific and business-like [illegible] arrangement of the information after it is [illegible] and also for the interpretation of the [illegible] which can be used by those who are responsible for constructive and executive [illegible] available for the people in other countries as well as for the people of Canada. It is not enough to [illegible] students who [illegible] possible unavoidable by those who [illegible] benefit. There is [illegible] the welfare of Canada [illegible]

As a head-quarters such a museum should have a S[illegible] or fundamental industries: agriculture and [illegible] fisheries, forestry, mining and water powers. [illegible]

models, examples, descriptions and data of all requirements in these industries.

Then there should be a Section for the secondary or manufacturing industries. Perhaps 9 or 10 sub-sections would provide for them if they were grouped or classified as we find them related in the businesses of the country. Any manufacturer should be able to find there examples of the best products in his line together with data as to materials, processes, etc. We should establish a sort of exchange or clearing house where the improvements made in any industry may become known for the mutual advantage of all. Some may say that the successful manufacturer would want to keep his knowledge of methods and processes exclusively for his own advantage. Perhaps there are such manufacturers. But I put it to you: Is it not the duty of the state to cure such citizens of the evil of persistently seeking personal gain to the hindrance of public welfare?

The third Section of the Museum would be the place where industries producing machinery, equipment, tools and designs for manufacturing plants would be represented. If a man is in the pulp and paper business, or in the fishing business, or in a textile trade, or turning out leather products, or engaged in one of the wood working industries, if he can go and study exhibits by firms who supply the plant for such businesses as his, surely that will be a big factor in helping him to improve his business, and at the same time [illegible] betterment of Canadian industry in general. We should have a place or places where this information would be obtained, and some means of advising those who are seeking this information where they can go and get it.

The fourth Section of the Museum would deal with Transportation and Marketing; and the other Section would be devoted to Fundamental Professional Services in their relation to manufacturing and commerce.

In an organization of this kind, the most important thing is the ability and character of the director and staff who carry on the work. That factor will likely determine success or failure. While a museum is a place for the arrangement of specimens, all of them need not be dead in every sense all the time. A museum should be an institution for the suggestion and nurture of living thoughts and vital policies. Its influence

should be radiant and dynamic on national activities as well as on private businesses. The newspapers and trade journals do a great deal to disseminate information. But what is required is more than news; it is new ideas and their dissemination. The museum would be a central bureau for the collection and arrangement of the new knowledge required in the various industries. A capable staff is required to interpret and to disseminate this knowledge.

Education for Occupations.

In addition to the surveys and the information, perhaps nothing would help us more to develop a thoroughly competent civilization in Canada than the extension and improvement of education whereby the young people would be trained for their future occupations. We need officers highly trained and we need the rank and file properly qualified for their work. In Canada we have about 380,000 young people, between the ages of 14 and 18 whose lives are partly going to waste for want of a chance to participate in suitable educational training after they had passed through the elementary schools. That calamitous waste of life, between the years of 14 and 18, is the greatest waste that could possibly occur in a young country. We seem to be like the afflicted, told of in the scriptures in the olden days, who stood at the brink of the pool waiting for an angel to come and stir the waters. Hitherto I fear that the angel in Canada who periodically stirred the pool was the angel of self-interest. Another sort of angel must come to our service. If any organization will stir the healing waters and let these 380,000 young people enter upon courses of training to prevent inefficiency, want of interest in life and lack of ability to go into Canadian occupations, then we may look for a development that will mean both prosperity and a more satisfying life to all our people. Everyone who helps a young man and young woman to be prepared for their life work is thereby helping the young people to earn more and providing the means for creating ever increasing wealth in Canada. And that is not all. That is not the best that comes from educational training for working and living. There is increase of capacity for enjoying and for serving, as well as for earning; and above all there is the development of character towards

the realization of man's chief end; to glorify the good and to enjoy it forever.

We are on the threshold in Canada now, and those men who can, should lead. But be very careful not to get too far away from the followers. Let them lead, but not too far advanced, and those who are just growing up into the various industries of the country—let them follow on.

I wish this movement every sort of success, and I assure you that this movement will have from me every help that I can give it. (Applause).

THE CHAIRMAN: It must be a pleasure to us here to know that a great Institution, like the McGill University, is so well represented here to-night. (Applause). I now have pleasure in calling on Sir William Peterson, the Principal of McGill University, to give us the benefit of his observations. (Applause).

SIR WILLIAM PETERSON: You quite surprise me, gentlemen. This is not up to the printed programme. I thought you had already heard from McGill.

I have listened with a great deal of interest to what Mr. Harpell has said, and what was said by the Professor of Education at McGill University, and I appeal to Professor Dale's speech to-night to show you that the Department of Education is one that is trying to instill a practical interest in educational matters.

You have already heard from McGill, and I cannot see anything for me to do, but to sit back and see that this work is being done properly. (Laughter). But I must say that I have been sincerely interested in practical education, of which we are hearing so much in our speeches to-night.

One thing more than another in Professor Dale's speech this evening that impressed me was it was given with a total disregard to the fact that the Dominion of Canada—the Dominion Government, has not done possibly what it should have done in connection with the education of the young, and also of the fact that the Province of Quebec has not reached a stage of compulsory education, much less the stage where, as Mr. Dale has said, in England they may increase the age limit for compulsory education from fourteen to sixteen. Who are we that we should compare ourselves with what is going on? In dealing with this problem of education, I made myself decidedly unpopular by telling people what was going on outside of the Province of Quebec. Some said to me, "You

must not speak of what is going on in Scotland; this is Quebec." I said, "I do not know any difference between Scotland and Quebec excepting that Quebec is distinguished for its poverty and ignorance." That was a terrible thing to say. It took me years and years of honest work to justify that view, but what we have heard to-night reminds us that we have a long way to travel before we can see anything here like what Professor Dale put before us in regard to a compulsory educational system up to sixteen years.

If you walk along the streets of Montreal and pass some of our great schools just as the children are coming out, you would not fail to be impressed and would wonder where they would all find their future existence, but any organization that will do as Mr Harpell's organization has set out to do, to bring the work of the schools into vital relation with the work of the industries, that is to be theirs in after-life, should be welcomed—yes, doubly welcomed in an audience such as this to-night, or by any audience engaged in industrial life in the Dominion of Canada or the Province of Quebec.

I have said these few words wondering why you have called upon me, when my friend on my right sits enthroned, and has yet to say his word.

I shall only conclude by saying that it has always been my object to give practical profit, and an Institution with which I have the honour to be identified, cannot limit itself to aspirations of being merely an academic ornament, but must strive to make itself useful in the community. (Applause.)

THE CHAIRMAN: I don't think this is a case where we can have too much of a good thing, and I will now ask Doctor Maccallum, the Chairman of the Advisory Council of Industrial and Scientific Research, Department of Trade and Commerce, at Ottawa, to speak to us, giving us his views on the subject matter of this gathering here to-night. (Applause.)

DR. MACCALLUM: Mr. Chairman and Gentlemen: I have great pleasure in being here to-night to hear all sides of the question which perhaps is almost wholly outside of the functions of the body over which I preside; that is the manual training of the great army of the industrial workers of Canada.

I am very glad that I have been able to hear this presentation of the case, and I was so interested all along that I forgot I would have to present my views

my thoughts in an ordered manner, that I may make a reasonable appearance before you.

I may only say, however, that the problems which you have treated are one of superlative importance. I have always felt that in this country of ours there is too little attention paid to the definite training of the young people to form or become citizens of the State. When I have used that word "citizens" many people have thought I referred to the political aspect of the situation. But, there is something more than that; I think that more can be done to train them for their ordinary functions as industrial workers, and that is as great as training them how to perform their functions at the polling booth or elsewhere. Now, don't think I belittle the latter, because that is not a fact. The importance of that is very great, but the other is becoming one of supreme importance to-day.

I want to call your attention to the fact that we have entered upon a new phase in the creation of the world. This war is going to make such a change that we shall have to question our own position. It has been stated that when this war closes, if it closes in one or two years, it will leave a debt of about $120,000,000,000 on the civilized portion of the world, divided up amongst the various countries. Germany will have more than thirty thousand millions of dollars of debt. In a country worth only thirty-seven thousand million, you see the situation, and the efforts of the entire world will have to be directed towards lifting that debt, and the various nations will have to compete with one another in order to do it. Some of the countries are now preparing for that task. Germany and Austria are now preparing. We have had some testimonials to that effect already.

I have been in Germany sixteen or seventeen times, and have spent months there, although I have never had any training or any particularized education in that country, but I have been there many times, and I have known before the war something like three hundred of their university men, or men of their technical schools or institutions, and I have studied their technical institutions, and I must say that, however else they are ill-fitted for civilization; however else they are ill fitted for the respect of other nations, they are supremely fitted for the struggle that is to begin after the war. They will reduce the prices of everything until our own industries will be either extinct or have

to compete with them, unless, of course, we bar their commerce, which has already been suggested, but which I believe is unthinkable when we consider the forces that make up their civilization.

That brings us to the position which we occupy. Are we fitted? You gentlemen have been dealing with the one aspect of training the privates in the industrial army. Now, the board which I represent is concerned with the training of the officers of the Industrial Army. That Industrial Army will be a leaderless mob unless we have the honest skill and efforts of the most competent "officers" to lead them, in the competition with Germany, with Austria, and even with Russia and France, because even our own friends will be our competitors after the war is over.

Our duty is to produce the officers for your industrial army. We are going to try to produce researchers of the highest type and we hope our own people here are capable of developing along that line. The general feeling seems to be that we are capable of producing researchers out of a crowd on the streets. That is a mistake. Researchers belong to a peculiar type. They are men who have a peculiar kink in their make up, but they are invaluable just on that very account, and consequently, it is our effort to find out where they are and to encourage them, and direct them in the field for which they are best fitted. That is the explanation of our function.

Let me say here that I am greatly interested in everything that was said, and I want to say that, especially as far as our Council is concerned, we will welcome suggestions from every quarter. Any organization, whether it may be, Pulp and Paper Associations, Textile Associations, Mining Associations, and Mining Institutions, will find in us their friend, and we will help them all we can and we will put out resources at their disposal and their command.

THE CHAIRMAN: Our only difficulty this evening is a surfeit of riches. There are many here that we might call upon, but the hour is getting late, and we will only call upon one or two more. We have with us this evening Mr. Carl Riordon, the Past President of The Canadian Pulp and Paper Association, whom I will now ask to give us his views.

MR. CARL RIORDON: Mr. Chairman and Gentlemen: It occurred to me, when Mr. Harpell asked me if I would say a few words, that the thing that bears

directly on the question we are considering here to-night was the little progress that had been made in the pulp and paper industry. Shortly after the Canadian Pulp and Paper Association came into active life the Government established the Forest Products Laboratory, and shortly after these two things had been established we inaugurated what we call the Technical Section of the Association, and we have since arranged with the laboratory that a part of the work, particularly that concerning the industry, shall be done in co-operation with a committee representing the Technical Section. In this way the laboratory works in close association with the industry.

This has already been done, and so far is working most satisfactorily. This provides for a happy interchange of knowledge between the different parts of the industry and the technical section

The Technical Section includes the managers of the mills, the superintendents of the mills, the foremen, the engineers, the chemists and most all the men holding these positions in Canada are members of the section, and are taking an active part in it, and are telling each other a great deal that is mutually beneficial. Besides they form an organization through which men who have expert knowledge, can reach those who are endeavouring to learn. In fact, it encourages men to learn and become progressive. We must not forget that some of us die, and some are born, and it is necessary to provide means to pass the knowledge on to the next

Mr. Carruthers, who is with us to-night, is responsible for another excellent movement in the pulp and paper industry, in the shape of night classes at Thorold, for the workers in the pulp and paper mills of that district, and it seems to me that some such institute as is proposed here to-night could go a great deal to encourage more of the workers in our industry to become progressive students of their business.

I wish to express my pleasure at the generosity of Mr. Harpell in bringing us together, as I feel it is going to result in something worth while. (Applause

THE CHAIRMAN: We will now have a few words from Mr. George Carruthers, of Toronto, President of the Inter-Lake Tissue Mills, Limited.

MR. CARRUTHERS: Mr. Chairman and Gentlemen: I wish to take this opportunity of thanking Mr. Harpell for his kindness in extending an invitation to me to be present at this most interesting meeting to-night. You may have heard of a young man who wanted to know what that Scotch dish known as a haggis, was told that "There is oatmeal intilt; there in suet intilt; there is spices intilt; and there are other things intilt." "Yes," said the young man. "But what is intilt?" "D— n it," said his informant, have I not told you what is intilt?"

Now I came here to find out what is "intilt."

Mr. Harpell's educational haggis seems to me to be a very good thing, and I came here from Toronto for the purpose of finding out more of what is "intilt", and I have not been disappointed.

I have received a great deal of credit for the night school at Thorold, but the establishment of that school was more or less a selfish idea of mine, because we are training the young people for better work in our own industry.

The difficulty we experience in paper mills is the need of capable workmen, men who have an appreciation of the importance of applying science to their industry, and while we cannot hope, in one of these night schools, to develop men who can take the higher positions, we can give the average workman a general knowledge of the fundamentals, and a habit of, and some knowledge concerning the science of the industry. Most mills have a capable superintendent, and at least one good chemist directing operations, and their work will be strengthened when those working under them have a little technical education such as they receive at our night school in Thorold.

At that night school we include several of the elementary branches. They study arithmetic, manual drawing, chemistry and electricity, and they are making very good progress, with an average attendance of from sixty-five to one hundred per night.

The Government of Ontario have been very liberal in their support of this work, and I believe the other provinces will be equally generous, as soon as manufacturers have convinced them of the need for it.

Now with regard to this idea of Mr. Harpell's, I would like to tell you that no more than a month ago one of my boys asked me what "cochineal" was. My mind immediately flashed back to the little red school

house in Simcoe County, Ontario, twenty-five years ago. There was a series of lessons in the books there called the "Oliver Boyd's Object Lessons," placed on little cards about twenty-four by eighteen inches. On one of these cards "cochineal" was described, with a little piece of the bark, and a small patch of the cochineal insects clinging to it. Along side was a small piece of cloth coloured with cochineal dye. That constituted my entire knowledge of cochineal. This was over twenty-five years ago, but it was useful here about a month ago, when my boy asked me the question, and I am glad to say I was able to give him the information.

I know it is getting late, but in order that something definite and concrete may come out of this gathering here to-night, I wish to propose for your consideration the following resolution. (This resolution appears elsewhere in this volume.)

MR. D. J. BYRNE: I have much pleasure in seconding that resolution. I do not think it needs further comment from me, as its purpose is fairly clear.

After some further discussion, during which Mr. Van Bruyssel who had much to do with the establishment of the commercial museum in Brussels, Belgium, some years ago, made valuable contribution, the resolution was unanimously adopted.

BY THE CHAIRMAN: Gentlemen, we have heard from several members from the east, and it is now my pleasure to introduce a gentlemen from the west. I will ask you to give your attention to Mr. Horace Chevrier, of Winnipeg, President of the Retail Merchants' Association of Canada.

MR. CHEVRIER: Mr. Chairman and Gentlemen: I am sure that I have followed with a great deal of pleasure, and much satisfaction and profit, the various speeches and presentations made here this evening. It has all been very interesting to me, to watch for something that would have relation to one particular part of Canadian Commerce that is all too little dwelt upon, that is the distribution of Canadian products back to the consumer, after coming through the hands of the manufacturers from the producers who originally handled them, and I trust that this bureau that is sought to be organized, will give every care to the technical education of the men who distribute the products of your manufacturers.

I am glad for the opportunity of being here, and I

have to thank Mr. Harpell for the chance that was offered me of hearing what has been said, and of listening to the arguments that lead up to the passing of that resolution. We realize that there is a great deal to be done in the way of technical education along all lines. We see what other countries are doing, and understand that if we are to keep Canada to the front we must improve the skill of our industrial army. Progress to day is the watchword of every people, and we in the west are not going to be behind in the procession. We have the inspiration which unfortunately has come more from the Western States than from Eastern Canada, where we, as Canadians, would prefer to look for it. But you have started something here to-night which, I am sure, the West will be glad to assist you to develop into a national institution. At present the West is giving considerable attention to the improvement of her towns and villages. It is so easy for a man to lose confidence in his own town—to feel that other places may expand and be prosperous, but there is no hope for his town, to feel that he can buy his supplies in other centres so much better than in his home town; in general, to become a knocker instead of a booster of anything local, and so hinder, instead of assisting in the upbuilding of the town or village in which he lives. This movement to which I have just referred, is known as the "municipal uplift" movement. It has not been with us long enough to produce results, but in many of the Western States it has worked wonders. Towns that were showing signs of decay have been brought back to a condition of healthy and vigorous life and expansion, and after all it is so simple. A community is made up of individual citizens, and can be no better and no worse than these citizens choose to make it. Improve the citizens, and you improve the community. Turn their minds in the direction of improvement, and you have improvement. Increase their skill in production, and you have increased production.

If I have rightly interpreted the desires and intentions read into the resolution we have just adopted, it comprehends a national organization which will encourage the establishment in every community of a Bureau of Information, a commercial museum, a commercial library, and facilities for technical instruction an organization calculated to arouse the people to

enquire and look for information and training and facilities to supply these demands.

That is an inspiring undertaking, and one in which, I believe, we will have the support and co-operation of every community.

I am sure you will find no Province more ready to take up this work than the Province in which you live, and no section of your population more ready to lend its support than the population which speaks French. You may not know, but the born inventors of Canada are the French boys. They can do more with less than almost anyone else, and they can also get along with less, and if you have anything to propose to them, or anything to ask of them, study their manhood, realize their peculiarities, which are as strange to you as your own are to them, take them into consideration and understand that they are of a nation of romancists and idealists, and naturally they plan in the ideal form, and you will see that great good can come out of it, and you will have their co-operation and their help, and their enthusiasm.

If the remarks of my learned friend to the right (Dr. Robertson) could be heard in every French-speaking village in Canada, the lad there would almost think he was listening to a man of his own peculiar mind—of his own Latin mind, who was appealing to him, and he would respond, because that is an ideal, because he is asked to do something for the country in which he lives, and the country which he loves, Canada

If you only place this movement on the ground of self-interest you can get very much less response from them than if you placed it upon a higher plane. If you place this upon the ideal you are going to do good to the whole country at large.

In supporting you and in promising you the support of the retail merchants from one end of Canada to the other, I offer that which I am sure will be welcomed by you, not only because of the good it will do you, but the good it will do to every citizen living in this country, Canada, which we love. (Applause).

THE CHAIRMAN: There are quite a number of gentlemen here to night from whom we would like to hear, but the hour is getting late, and we will only call upon one or two more.

I take pleasure in calling on Mr. H. P. Timmerman, Industrial Commissioner for the Canadian Pacific Railway, for a few words.

MR. TIMMERMAN: Mr. Chairman and Gentlemen: I appreciate the honor very much of being here this evening, and when Mr. Harpell asked me to come here this evening, it reminded me of an occurrence which happened some little while ago, when a dear, old friend of mine who was very fond of catching salmon, asked me, when I ran across a friend who had a saw-mill down in New Brunswick, to tell him that he had stolen some pork out of his barrel last year, and he wanted to thank him for it. I have been stealing some pork out of Mr. Harpell's barrel—the publications of the Industrial and Educational Press—which have contained some very valuable information to me in my work as the Industrial Commissioner of the Canadian Pacific Railway.

I heartily agree with the movement started here tonight to establish bureaus of information, such as have been outlined.

Heretofore the railway companies have been busy building their roads from the Atlantic to the Pacific, and they have hardly had time to consider anything else. But we have gotten over that, and we are now filling up this framework—developing the resources and establishing industries in the communities along these lines, and any movement which will assist this undertaking will have our support.

THE CHAIRMAN: We have one more gentleman here this evening from whom we would like to hear. I will now call on Mr. Charles W. Bates, Vice-President of the Canadian Textile Institute, for a few words.

MR. CHARLES W. BATES: Mr. Chairman and Gentlemen: So far as the textile manufacturers of the country are concerned, I am sure anything in the way of education or educational awakening will be very much appreciated, because we have found it difficult to get young Canadians who are qualified for the positions in our factories. We have been compelled almost entirely to go to the United States and to England and Scotland for our technical men. At the present time, the industry is greatly in need not only of technical men, but young beginners, because the industry is growing, and is being put on a much stronger footing than ever before.

Somehow the textile industry is not attracting the best of our youth. The boy leaving the high school

does not see much for him in the textile mills, because he does not understand the possibilities that there are in that industry for him, for there are splendid opportunities. The industry is growing; the mills are increasing in size; the small custom mills of the smaller towns are being enlarged into good-sized factories, occupied and equipped with modern machinery, and this requires, in all departments, a high grade of supervision.

We have hopes that the Textile Institute, which has been recently formed, will be of great service to us. It is now in operation, and with the establishment of local branches, we will have facilities which will offer attractive methods of training to the better class of our young men. We know we have in our communities splendid material, if there was something to excite their ambitions, and give them an opportunity of perfecting themselves. I believe that some such movement as has been started here to-night will stir up their ambitions, and be of great good and benefit to the textile industry, and I am sure that the industry will heartily co-operate with anything that is being done along that line. (Applause).

THE CHAIRMAN: We have now reached the end of the programme, if I may speak of a programme, and unless some other gentlemen have something further to remark, I will bring this meeting to a close. I am sure that we are all indebted to Mr. Harpell for the fact that he has given us this opportunity to be here to-night and listen to the various addresses.

May I ask Mr. Byrne to lead off with "God Save the King"?

MR. BYRNE: Before doing so, I would like to move a vote of thanks to the Chairman of the evening.

This vote being seconded, was unanimously carred.

THE CHAIRMAN: I thank you.

"God Save the King" was sung, and the meeting adjourned.

Memorandum Giving an Outline of the Organization and Arrangement of a Commercial Museum, Prepared by Dr. Jas. W. Robertson.

Objects:

(a) To exhibit specimens or samples of materials, articles and products for use in the improvement and extension of industry and commerce in Canada.

(b) To furnish information: (1) as to where, from whom, how, and in what quantities, goods produced in Canada and goods required in Canada may be obtained; (2) as to where, to whom, in what form, how, and in what quantities such goods may be sold.

(c) To provide for making loans and gifts to different institutions in Canada and elsewhere for purposes of exhibition and instruction.

The organization of the museum should provide for making it natural in its scope and service. It should be an institution for the suggestion and nurture of living thoughts and new policies as well as a place for the exhibition of specimens some of which would necessarily be dead.

The organization should provide for the employment of persons competent to bring the capabilities of its service before Boards of Trade, Chambers of Commerce, Institutions of Learning and other Bodies in some systematic and adequate manner.

The arrangement of the materials and products into Sections and Sub-sections, according to their commercial relationships, would provide means by which they would perhaps render the most useful service. In some cases it would be of advantage to have materials exhibited in the different and successive stages of the manufacturing processes.

The extent of the museum would be limited by the space and the amount of money available for its establishment and maintenance.

Section I.—Primary or Fundamental Industries.

In their relations to Commerce.

Sub-Section 1: Agriculture and Horticulture.

(a) Specimens and samples of products as sold by original producers.

(b) Models, descriptions and examples of requirements in respect to buildings and fittings, seeds, fertilizers, tools, implements, machinery, harness, vehicles, oils, fuels, etc.

Sub-Section 2: Fisheries:

(a) Samples of Products.

(b) Models, descriptions and examples of requirements, in respect to boats, gear, wharves, accommodation and equipment for cleaning, curing, sorting, packing, branding, shipping, storage, etc.

Sub-Section 3: Forestry:

(a) Exhibits of Products.

(b) Exhibits of requirements for production (and protection) such as tools, camp equipment, etc.

Sub-Section 4: Mining, Quarrying and Digging:

(a) Exhibits of Products.

(b) Specimens, descriptions and examples of requirements in respect to machinery, tools, explosives, mine equipment, (ventilation), etc.

Sub-Section 5: Water Powers, Wind Power, Electric Power, Fuels:

(a) Data as to availability.

(b) Illustrations of installation, generation, distribution, application, etc.

Section II.—Manufacturing Industries .

Sub-Section 1: Animal and Plant Products as Foods and Beverages:

Manufactures of and equipment used in connection with distribution and preparation for consumption.

Sub-Section 2: Textile Trades and Allied Products:

Woollens, cottons, linens, silks, mixed fabrics, threads, yarns, cordage, nets, jute, clothing, hats, caps, furs, millinery, umbrellas, buttons,

pins, needles, blankets, bedding, carpets, rugs, curtains, blinds, brushes, brooms, etc.

Sub-Section 3: Leather and Rubber Products:

Leathers, belting, harness, saddlery, automobile and carriage fittings, boots, shoes, gloves, overshoes, bags, insulating coverings, trunks, etc.

Sub-Section 4: Wood Working Trades and Allied Products:

Woods, doors, windows, sashes, furniture, wooden utensils, baskets, boxes, vehicles, boats, glass, paints, stains, etc.

Sub-Section 5: Pulp and Paper-making Industries:

Pulps, papers, wall papers, indurated products, etc.

Sub-Section 6: Metal Trades and Allied Products:

Structural and other iron and steel, agricultural implements, tools and machinery, engines, automobiles, other vehicles, boilers, heating appliances, stoves and cooking utensils, bedsteads, hardware, cutlery, plumbers fittings, sheet metal work, lighting fixtures, electrical fittings, fences, wire work, etc.

Sub-Section 7: Stone Clay, Sand and other Non-Metal Minerals and Products:

Building materials, stones, bricks, marbles, cement, dishes, plaster, crockeryware, glass, glassware, asbestos, mica, asphalt, etc.

Sub-Section 8: Graphic Arts and Fine Arts:

Papers, books, stationery, boxes, pictures, musical instruments, jewellery, watches, clocks, eyeglasses, etc.

Sub-Section 9: Miscellaneous Products

Soap, dyes, medicines, chemicals, tobacco, ink, etc.

Section III.—Industries Producing Machinery, Equipment, Implements, Tools, Utensils Instruments, Designs, Etc., Used in Manufacturing.

Sub-Section 1: **Food Industries,** such as milling, canning, curing, packing, refining, confectionery, dairying, etc.

Sub-Section 2: **Textile Trades,** clothing, cordage, etc.

Sub-Section 3: **Leather Trades,** belting, boots, shoes, gloves, saddlery, trunks, bags, etc.

Sub-Section 4: **Wood-Working Industries.**

Sub-Section 5: **Pulp and Paper-Making Industries.**

Sub-Section 6: **Metal Trades.**

Sub-Section 7: **Mining and Stone Trades,** brick, cement, glass, dishes, porcelain wares, etc.

Sub-Section 8: **Printing, Binding, Engraving, Trades, Fine Arts, Etc.**

Sub-Section 9: **Miscellaneous Products,** soap, dyes, medicines, tobacco, chemicals, inks, fertilizers, etc.

Sub-Section 10: **Building Trades.**

Section IV.—Transportation and Marketing.

Sub-Section 1: Railway rolling stock, electric railways, road building plant, horse vehicles, motor vehicles, bicycles, ships, boats, etc.

Sub-Section 2: Elevators, warehouses abattoirs, cold storage, hand trucks, etc.

Sub-Section 3: Distribution:

Equipment of offices, stores, shops, methods of delivery, etc.

Sub-Section 4: Banking and Credit.

Bank fittings, diagramatic, statistical and descriptive representation of nature of service to industries and commerce.

Section V.—Fundamental Professional Services.

(In their relations to Commerce).

Sub-Section 1: **Health:**

Physicians' and Surgeons' instruments, hospitals and equipment, equipment of sanitary engineers, food inspectors and health officers, water-supply, ice supply, disposal of sewage and garbage, artificial limbs, trusses, etc.

Sub-Section 2: **Education:**

Equipment of laboratories (scientific, technical, industrial), equipment for manual training, do-

mestic, science and nature study, school furniture, models, other equipment, etc.

Sub-Section 3: **Recreation**:

Equipment of gymnasiums, playgrounds, theatres, moving pictures, games, toys, etc.

Sub-Section 4: **Arts**:

Equipment for printing, bookbinding, photography, photogravure, painting, sculpture, wood-carving, engraving, architecture, etc.

Sub-Section 5: **Engineers**:

Equipment for engineers (civil, mining, mechanical, hydraulic, electrical and sanitary).

Sub-Section 6: **Religion**:

Equipment of churches, as to furniture, vestments, etc.